

REMARKS

The present invention provides an improvement to a coin separating unit, for example of the type disclosed in the cited *Furukawa* (U.S. Patent No. 6,086,472).

Problems have occurred when a plurality of different coins are fed in a bulk condition for transporting by a coin transporting unit, for example of a rotatable belt configuration, where different size coins from relatively small coins to thicker coins can be placed on the same transporting surface.

As can be appreciated, there is a desire to have a relatively inexpensive configuration that can be easily maintained while increasing the speed of processing the coins in bulk. The present invention provides a number of features to accomplish these goals, including providing a coin transport support surface with a predetermined flexibility and friction characteristic to assist in engaging the coins for translation beneath a separating roller unit. A coin transport unit, for example a rotatable belt, can move relative to the peripheral surface of the separating roller unit to accommodate the different size coins while facilitating the separation and orderly dispensing of different diameters and thicknesses of coins from a plurality of coins that are deposited upon the rotating belt surface.

The separating roller unit itself can be driven to rotate counter to the direction of movement of the support surface and to position a satellite supporter unit rollers upstream of the separating roller unit and further, a satellite auxiliary coin drawing unit located downstream of the separator roller unit. The position, size and location of these roller units can both separate any overlaying coins while assisting in the flexible transportation of the respective coins beneath the separator unit in an efficient and fast manner.

The cited references of record do not recognize nor teach these features in the novel way set forth in our currently pending claims.

The Office Action is believed to have indicated that Claim 9 was allowable but the face sheet of the Office Action Summary stated that Claims 1-21 were rejected. However, the body of the Office Action did not provide any rationale for rejection of either Claim 9 or Claims 20 and 21.

Certainly Claim 9, which defined a pivoting support member with an elongated surface for supporting an underside of the rotating belt, wherein any coin pushed by the separating roller into the rotating belt was accommodated by the pivoting support member to permit a traverse movement to the directional movement of the belt by tilting an elongated surface on the underside of the rotating belt was not taught in the cited references.

If applicant is wrong in its interpretation of the allowance of Claim 9, we would request the opportunity to respond to any explained rejection of Claim 9 over the art of record before a Final Office Action is issued.

The Office Action specifically rejected Claims 1-8 and 10-19 over a combination of the *Furukawa* (U.S. Patent No. 6,086,472) in view of *Tokoyoda* (U.S. Patent No. 6,368,204) under 35 U.S.C. §103.

As set forth in MPEP 2142,

To reach a proper determination under 35 U.S.C. §103, the examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. In view of all factual information, the examiner must then make a determination whether the claimed invention "as a whole" would have been obvious at that time to that person. Knowledge of applicant's disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the "differences," conduct the

search and evaluate the “subject matter as a whole” of the invention. The tendency to resort to “hindsight” based upon applicant’s disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.

The *Furukawa* reference is assigned to the assignee of the present application.

As can be seen in Figures 1 and 2, a hopper 11 is designed to receive coins that were dropped into the hopper to contact an endless belt 12. The specific features of the belt, however, were not shown nor taught other than the comments in Column 2, Lines 27-29, as follows:

While the details of the belt 12 are not shown, it is to be understood that it is rotated by a motor 11 which can rotate in forward and reverse directions.

The edge of the lower opening of the hopper was actually utilized to form a guide to align the coins in a row. See Column 2, Lines 38-41.

Of particular interest is a reverse roller 15 that was cited as the separating roller unit of the present invention as disclosed in Figure 2 as being positioned immediately over the support pulley of the rotating belt 12. As can be readily determined, the positioning of the alleged *Furukawa* “separating roller unit” cannot press a coin for traverse movement to the transportation direction immediately over a support pulley. Further, Figure 2 only shows sensors 14 beneath the belt for simply driving the motor upon dropping of coins onto portion of the rotating belt 12 which hypothetically could be flexible. The description of the sensors 14 are provided in Column 2, Lines 30-38.

The Office Action on Page 2, Paragraph 3, acknowledges the *Furukawa* reference was not capable of disclosing a coin transporting unit and a separating roller that can move relative for increasing a distance between them, nor that the distance is less than twice the thickness of the thinnest coin and larger than the thickness of the thickest coin.

The Office Action further acknowledged that the *Furukawa* reference was not capable of disclosing a supporting unit with a roller member mounted on a pivotal lever and rotating in an opposite direction to the coin transporting unit.

To address these deficiencies, the Office Action resorted to the secondary reference of *Tokoyoda* which specifically was attempting to resolve a problem in the design of the elevator or upward passageway 6 for elevating coins from a rotating coin selector in the bottom of a hopper.

As can be appreciated by a person of ordinary skill in this field, the coin selector, which is generally an inclined rotating disk at the bottom of the hopper, has already segregated individual coins from the bulk coins and has passed them through a coin discharge slot 3. Thus, the problems associated with bulk coins placed on a coin transporting unit such as a rotating belt, are not a problem in the *Tokoyoda* disclosure. There is no issue of thicker and thinner coins, nor of coins overlaying each other as they move on an inclined, horizontal surface.

Thus, one highly relevant inquiry in making an evaluation under 35 U.S.C. §103 is “[t]he relationship between the problem which the inventor. . . was attempting to solve and the problem to which any prior art reference is directed.” *Stanley Works v. McKinney Mfg. Co.*, 216 USPQ, 298, 304 (Del. D.C. 1981). Thus, in analyzing the prior art under Section 103 of the Act, we must clearly comprehend the problem addressed by the present inventors and that problem should be compared or contrasted, as the case may be, with the problems addressed by the prior art.

Basically, the *Tokoyoda* reference was attempting to conserve space, for example within a gaming machine, by eliminating the usual gentle sloping curve in an elevating passageway. Such a sloping curve passageway usually is necessary to permit the coins to translate from a roughly horizontal passageway to a vertical passageway.

Additionally, as can be further appreciated, such elevator units are not usually designed for different size coins although the elevator passageway is designed for adjustments, for example, so that a quarter size opening could be changed to a half dollar size opening by sliding the sides of an elevator together or apart. The resistance that can occur when you have a very small coin immediately adjacent a large diameter coin is obvious in that jamming and significant resistance could occur.

Referring to Figure 2 of *Tokoyoda*, a coin of the same size shown in the escalator is released from the discharge slot 3 to contact a bent receiving plate 4 to deliver the coin as shown in Figure 5 at an angle of approximately 45 degrees, A, the chamfered edges of the respective rollers 9a and 9b can then rotate the coin to the vertical position, B, shown in the dotted lines of Figure 5.

As can be readily appreciated, only one coin is discharged into the guide or coin receiving plate 4 and it is not horizontally translated on a support surface where a problem of overlaid coins could occur. Rather, the problem attempting to be solved is to provide a very short distance with a pair of facing rollers that are vertically arranged with a rotation of axes extending vertically and at angles to the guide receiving plate surface to quickly align the coin in a vertical arrangement so that only a short curved surface is necessary to facilitate the coin escalator base.

As can be appreciated, these rollers 9a are also used to be the compelling force to drive the same size coins vertically upward and to support the collective weight of the coins. See the teachings of the *Tokoyoda* reference in Column 3, Lines 45-53.

The Office Action referred to the teachings in Column 4, Lines 39-43, purportedly to compensate for adjustments in the thickness of the thinnest coin and the thickest coin. This

teaching, however, does not support this interpretation, as can be seen in the quoted language, as follows:

Therefore, when the inclined coin C enters the space between rollers 9c, 9d, the separation therebetween can be enlarged, and when coin C passes between of rollers 9c, 9d, the separation between rollers 9c, 9 is made narrower by operation of coil spring 14.

As can be seen from above, a single size coin that is "inclined" can be rotated and there is some play between the rollers 9c and 9d that can be provided by the operation of the coil spring 14. Thus, the coin C can actually force the rollers 9c and 9d apart to accommodate its inclined orientation and then when it is forced to a vertical position, the rollers then are narrowed by the operation of the coil spring 14. This teaching as applied to our present claims would apparently suggest pinching the already orientated horizontal coin against the separating roller.

As set forth in our claims, however, the separating roller is at a fixed position and our transporting surface, such as a rotating belt, is specifically designed to flex so that the separating roller forces the coin against the transporting belt to facilitate its driving motion underneath the counter rotating separator roller.

Our invention is dealing with a plurality of different denomination coins of different sizes that can be universally addressed by our separating roller, our uniquely arranged flexible transporting surface, and the upstream supporting roller unit and the downstream auxiliary drawing roller unit quickly move the coins while separating them in a one-by-one alignment arrangement, to further the coin processing.

The *Tokoyoda* reference does not experience nor address the same problems of our present invention, since the coins are already separated and are of a constant diameter with a position inclined to the vertical escalator passageway. The rollers in the *Tokoyoda* reference

rotate in opposite directions, and specifically pass the coin between the rotating surfaces from the motor driven rollers, not between the surface of a counter rotating separator roller and a linear moving flexible belt.

Our supporting roller unit and our auxiliary drawing roller units likewise contact with the upstream and downstream coins directly relative to the surface of the horizontally inclined movement of the belt.

Applicant respectfully submits that any hypothetical combination of the teachings of these two references would not address the problems resolved by our present invention, nor teach the structure of our present invention as set forth in our current claims.

As can be appreciated, the more that the cited references must be modified to meet the outstanding claims, the more likely that an unintended issue of hindsight may drive the rejection. This is particularly true for an Examiner who is attempting to provide a diligent effort to ensure that only patentable subject matter occurs. The difficult issue is to step back from the zeal of the examination process and to appreciate that the Patent Examiner has to wear both hats of advocating a position relative to the prior art, while at the same time objectively rendering in a judgelike manner, a decision on the patentability of the present claims.

Referring to Claim 1, it specifically defines that the support surface of the coin transporting unit has a predetermined flexibility and friction characteristic. This permits the separating roller unit to be positioned at a specific distance above the support surface, and to move in a direction opposite the movement of the support surface.

A supporter unit with a rotatable member mounted on a pivotal lever is located upstream of the separating roller unit. Its purpose is to engage coins and assist in preventing more than one coin from passing beneath it before the coin engages a separating roller unit. The flexibility

of the support surface accommodates a relative movement of the coin beneath the separator roller unit and our separator roller unit and the roller member rotates about parallel axes extending across the support surface.

The rotating rollers of the *Tokoyoda* reference is not positioned above a coin transporting surface that is moving, nor are they rotated about parallel axes extending across the support surface so when the separating roller unit and the roller member contact a coin in translation to force the supporting surface, for example of a rotating belt away from the separating roller unit, when passing a coin beneath the separating roller unit.

It is believed that the other independent and dependent claims likewise define patentable features based on the above arguments.

The newly drafted Claims 22-26 provide further distinguishing features such as a relatively mounted support member beneath the coin transporting unit to limit the extent of the transverse coin movement beneath the separating roller unit.

The Office Action already acknowledged that the *Furukawa* reference is not capable of teaching these features, and certainly the *Tokoyoda* reference is directed to a completely different form of vertically aligning a coin after it has already been separated and delivered through an inclined coin discharge slot.

Our dependent claims further define that the rotatable flexible belt can have a urethane rubber surface and a polyimide core, along with the use of a one-way clutch to provide the rotation to the separating roller and the relationship with the diameter of the separating roller to the supporter roller unit.


Newly drafted independent Claim 27 likewise defines these patentable features and further adds the drawing roller unit location and operation and its relationship to the separating roller unit, which is not taught nor suggested by any combination of the references of record.

In view of the amendments to the claims and the above comments, it is believed the case is now in condition for allowance and an early notification of the same is requested.

If the Examiner believes a telephone interview will help further the prosecution of this case, the undersigned attorney can be contacted at the listed telephone number.

Very truly yours,

SNELL & WILMER L.L.P.



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